POWERLON® UltraPerm MAX

CE

Industrial Textiles & Plastics Ltd.
Stillington Road, Easingwold, York YO61 3FA, UK

UltraPerm Max WLNU-1050K & WLNU-1550K
Certified Universal Breather Membrane

Colour	Green
Weight	155gsm
Tensile Strength	MD 320N/50mm XD 200N/50mm
Nail Tear Resistance	MD 170N/50mm XD 250N/50mm
Water Vapour Transmission	Sd 0.02m
Water Tightness	W1

DIMENSIONS

Roll Size	Roll Weight
1.0 x 50m	8.3kg
1.5 x 50m	12.2kg

APPLICATION

For pitched roofs and wall installations.

The membrane can be installed on fully supported or unsupported tiled or slated pitched roof constructions. It must be fixed in accordance with: BS 5534:2014 + A1:2015 Code of Practice for slating and tiling; BS 8000-6: 2013 Code of Practice for slating and tiling of roofs and cladding; BS 9250:2007 Code of Practice for design of the airtightness of ceilings in pitched roofs; BS 5250:2011+A1:2016 Code of practice for control of condensation in buildings; Building Regulations 2010 Approved Document F, Ventilation; and the NHBC guidelines for cold unventilated roofs. Installation can be carried out under all conditions normal to roofing work.

HANDLING & STORAGE

The membrane must be handled and stored to avoid damage and moisture. Rolls should be stored flat or preferably on end, away from direct sunlight, on a clean level surface inside a dry storage area.

NOTE: The shelf life of self-adhesive products is limited, usually between 6 months and 1 year (protected from direct sunlight and ambient temperatures above 30°C). Sealing tapes should be kept free of moisture and heat. Store away from sunlight in dry conditions at room temperature.

RECYCLABLE

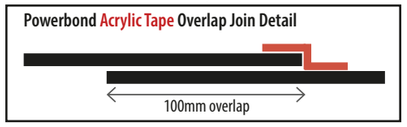
FLAME RETARDANT
EN ISO 11925-2 CLASS E

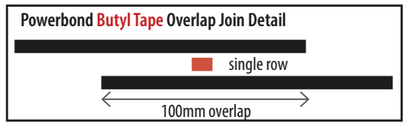
GENERAL INSTALLATION

1. Use non-corrosive fixings: nails should ideally be of galvanized or austenitic stainless steel, phosphor bronze or silicon bronze; staples should be of austenitic stainless steel.
2. These installation instructions are based upon currently available good practice and information and only offered as a general guide. Final determination of the suitability of any information or material for the use contemplated and the manner of use is the sole responsibility of the user and the user must assume all risk and liability in connection therewith. Check the suitability and safety of the products for the use envisaged with all current and applicable national standards.

WALL INSTALLATION

1. Unroll breather membrane and hang horizontally or vertically; fix to the outside of the frame using non-corrosive fixings. With SIPs panel, the membrane can be stapled to the panels
2. If applicable, the printed side of the membrane should be visible and on the outside.
3. Upper layers should overlap lower layers in a tile effect for water run-off.
4. Ensure the membrane covers the lowest framework by a minimum of 25mm as it is essential that the lowest timbers in the wall are protected by the breather membrane. Make sure that the positions of studs are marked to enable wall tie fixing.
5. At external corners, return the membrane by at least 100mm.
6. Form min. 100m horizontal laps and 100mm vertical laps. Stagger vertical laps by a minimum of 100mm.
7. If the design needs to be air tight, the lap joints and penetrations through the membrane can be sealed with Powerbond Acrylic Tape (waterproof & single sided) or Powerbond Butyl Tapes (double-sided).





8. Nail or staple the membrane to every stud at maximum 200mm centres. Secure the membrane sufficiently to prevent any wind damage
9. At window and door openings, return the breather membrane into the opening and fix to the reveals with non-corrosive fixings and trim.
10. If the membrane will be exposed to the elements before the cladding is installed, battens should be fixed to prevent wind uplift which will damage the membrane.
11. This information is for guidance only; details of the build should be considered carefully with the architect and designers.

ROOF INSTALLATION

1. Fixing - the membrane is laid in the traditional manner, starting at the eaves and progressing to the ridge. The membrane is laid printed side uppermost, parallel to the eaves and dressed with a minimum of 150mm on to an eaves guard to conduct water into the gutter and to ensure the edge of the membrane is protected from sunlight. A staple hammer may be used to position the membrane prior to final battening.
   Where the membrane is draped over rafters, in the case of an unsupported roof, horizontal laps should be covered by a batten with the bottom edge of the lap projecting less than 25mm below the batten to ensure that the edge is secured against wind uplift.
2. BS 5534:2014+A1:2015 - Each wind zone must be determined by the geographical wind zone map issued by BRE and BSI. In cases applicable the UltraPerm membrane does not require a taped overlap. Horizontal lap will be reflected by the roof pitch as per table 1. Butt-jointed planks are also denoted as an unsupported roof structure under the BS 5534:2014+A1:2015.
3. BS 9250:2007 - in accordance with the new BS 5534:2014+A1:2015 underlays are to be used conforming to all conditions including a well-sealed ceiling, in terms of cold and warm pitched roofs.
4. Counter battens - where required, counter battens should be at least 12mm thick.
5. Tiling battens - to allow dispersion of water vapour and to carry the weight of tiles or slates, tiling battens must be a minimum of 25 mm thick (see Table 2 - minimum timber batten sizes to BS 5534:2014+A1:2015), except Scottish practice.
6. Service penetrations - for these, chimneys and roof lights, the membrane should be dressed a minimum of 100mm to the up-stand and sealed effectively by an appropriate flashing. Adequate soakers should be provided above any holes or openings.
7. Duo-pitched roofs - the membrane from one elevation should overlap the other by at least 150mm. The membrane should be sealed around penetrations through the roof at the ridge to accommodate high level void ventilation.
8. Mono-pitched roofs - the membrane should extend over the mono ridge by at least 100mm. It is recommended that the membrane be extended to provide protection to the ends of the roof timbers.
9. Hips and valleys - should be covered with a separate 600 mm wide strip of membrane.
10. Verges - underlay intended for use on verges should lap onto the outer skin of the brickwork by 25mm to 50mm or in the case of an overhanging verge, onto a flying rafter as per BS 5534:2014.
11. Abutments - the membrane should be returned up to the abutment by not less than 50mm under the flashing.

Health & Safety
Care should always be taken when working at height. The safety of all working in construction is critical, above and below.
Powerlon UltraPerm breather membranes should not be used as part of a fall arrest system.

SPECIFIC ROOF INSTALLATION REQUIREMENTS

STEP 1 — Check compliance with Condensation Risk Assessment

Condensation Risk Assessment calculations should be carried out in accordance with BS 5250:2011+A1:2016 (code of practice for control of condensation in buildings) for specific applications. This is referenced in the relevant sections of the Building Regulations in England & Wales (Approved Document C), Scotland (Mandatory Standard 3.15), Northern Ireland (Regulation CS) and Ireland (Regulation C). The complete building must be considered as a total system with regard to condensation risk. With a warm roof, design and detailing of the insulated part of the roof should comply with the relevant guidance in BBA Certification No. 13/5037. When using thermal insulation with a low vapour resistance, a Powerlon AVCL air and vapour control layer may be required on the warm side of the insulation in accordance with BS 9250:2007 (Code of practice for design of the airtightness of ceilings in pitched roofs). Where the roof may be subject to high humidity conditions a Powerlon AVCL air and vapour control layer should be considered with all types of insulation. If the membrane is fully supported on material which offers a high resistance to the passage of water vapour (sheet sarking e.g. plywood, OSB, chipboard) for design purposes the membrane should be treated as a High Resistance (HR) membrane as per BS 5250:2011+A1:2016. Final determination of the suitability of any information or material for the use contemplated and the manner of use is the sole responsibility of the user and the user must assume all risk and liability in connection therewith. Check the suitability and safety of the products for the use envisaged with all current and applicable national standards and NHBC guidance.

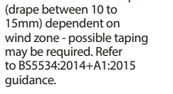
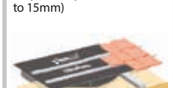
STEP 2 — Select roof design

Cold pitched roof		Insulated warm pitched roof		
Unsupported	Supported	Unsupported	Supported	

STEP 3 — Select roof type

Cold pitched roof – Unsupported	Cold pitched roof – Supported	Insulated warm pitched roof – Unsupported	Insulated warm pitched roof – Supported	
Conventional cold roof design	Membrane laid directly onto sarking/plywood/OSB board	Membrane taught OR draped between the rafters	Membrane laid directly onto sarking/plywood/OSB board	Membrane laid directly onto the insulation

STEP 4 — Select appropriate design option and note Specific Installation Requirements (Step 6 or 7)

Cold pitched roof – Unsupported	Cold pitched roof – Supported	Insulated warm pitched roof – Unsupported	Insulated warm pitched roof – Supported	
A. If roof is counter-battened, membrane must be installed with a nominal drape to guide any penetrating water away from the rafters as per BS 5534:2014+A1:2015	Roof must be counter-battened,	A. If roof is counter-battened, membrane must be installed with a nominal drape to guide any penetrating water away from the rafters as per BS 5534:2014+A1:2015	Is there an air gap between the boarding and the insulation?	
				
OR B. If roof is NOT counter-battened, membrane must be draped (drape between 10 to 15mm) dependent on wind zone - possible taping may be required. Refer to BS5534:2014+A1:2015 guidance.	**OR** as Scottish practice, with slates nailed through the membrane directly onto timber planks /sarking boarding (as per BS 5250:2011+A1:2015) nominally 150mm wide with a 2mm gap without battens	**OR** B. If roof is NOT counter-battened membrane must be draped (drape between 10 to 15mm)	**YES** Roof must be counter-battened, **OR** as Scottish practice, with slates nailed through the membrane directly onto timber planks or sarking boards (as per BS 5250:2011+A:2015) nominally 150mm wide with a 2mm gap without battens	**NO** Roof must be counter-battened, **OR** as Scottish practice, with slates nailed through the membrane directly onto timber planks (nominally 150mm wide with a 2mm gap) without battens
				

STEP 5 — Is the roof ventilated?

Cold pitched roof – Unsupported		Cold pitched roof – Supported		Insulated warm pitched roof – Unsupported	Insulated warm pitched roof – Supported		
YES Go to step 6	**NO** Go to step 7	**YES** Go to step 6	**NO** Go to step 7	**YES** Go to step 6	**YES** Go to step 6	**NO** Go to step 7	**NO** Go to step 7

STEP 6 — Specific Installation Requirements for ventilated roofs

Ventilated instructions (warm or cold roofs)
A distance of 50 mm should be allowed between the ridge and the edge of the membrane. A minimum ventilation gap between the insulation and the membrane of 10 mm is recommended. However, where the ceiling or insulation follows the pitch of the roof, a ventilation gap of at least 50mm is recommended in accordance with BS 5250:2011+A1:2016. Ridge tiles or vents may be used to assist with ventilation.

STEP 7 — Specific Installation Requirements for non-ventilated roofs

Non-ventilated instructions (warm or cold sealed roof systems)
Design and detailing of the non-ventilated roof should comply with the relevant NHBC guidance Part L 2010. Powerlon UltraPerm may be used without ventilated air space below the membrane, provided the passage of moisture throughout the rest of the roof structure is controlled and the system is convection tight. Air leakage paths to the roof space should be kept to a minimum as per BS 5250:2011+A1:2016, BS 9250:2007 and IP4/06 BRE Information Paper - Airtightness of Ceilings. All penetrations into the roof space must be properly sealed and loft hatches made convection tight by, for example, using a compressible draught seal. Other penetrations such as vent stacks and boiler flues must additionally be sealed along their length. To close the ridge, a 150 mm minimum overlap should be made on each side of the ridge. Note that with cold non-ventilated roofs, the insulation laid horizontally at ceiling level should be pressed tightly into the eaves against the membrane to ensure that no gaps are present.

Table 2

Minimum overlaps – as per BS 5534:2014+A1:2015

Roof pitch	Horizontal lap		Vertical lap
	Unsupported	Fully supported	
12.5° to 14°	225 mm	150 mm	100 mm
15° to 34°	150 mm	100 mm	100 mm
35° +	100 mm	75 mm	100 mm

Exposure - Powerlon UltraPerm may remain unprotected for up to 2 months, but recommended practice is to install tiles or slates as soon as possible, to minimise risk of water ingress through unsealed overlaps, edges and nail holes after any rain.

Internal works - adequate ventilation or de-humidification must be provided if the underlay is installed before interior work and any plastering has dried out to avoid condensation forming on the inside surface of the membrane